Baseline Water Quality Assessment of Groundwater Used for Domestic Supply, Gem County, Idaho, 2015-16

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In April 2015, the U.S. Geological Survey (USGS), in cooperation with Gem County and the Idaho Department of Environmental Quality, began a water-quality assessment of groundwater from shallow freshwater aquifers used for domestic supply in Gem County. A quality-assured dataset, of greater areal extent and analytical detail than is presently available, is needed to characterize the current groundwater-quality conditions in aquifers tapped by wells used for drinking water supply in Gem County. Such data will provide a baseline against which future water-quality changes can be evaluated, whether as the result of natural variability or of human activities. These data will assist water-resource managers and planners in the management of water resources in the county.

During September-November 2015, the USGS collected water samples from 48 wells and springs used for drinking water and 2 surface-water sites in Gem County. Samples are being analyzed for major ions, trace elements, nutrients, bacteria, VOCs or pesticides, alpha and beta radiation, dissolved gasses, stable isotopes of oxygen and hydrogen, and carbon-13 of methane (if concentrations permit). Field parameters were collected at the time of sampling and included pH, temperature, specific conductance, dissolved oxygen, and alkalinity. Quality assurance samples of various types were collected as part of the sampling process.

Sample collection was focused on deep and shallow wells in the Emmett valley; however, a few samples were collected from wells in other areas that were completed in granite, basalt, alluvium in the Ola-Sweet-Montour area, or in uplands north and south of the Emmett valley. These water-quality data, in conjunction with that from other sources, will allow the development of a hydrogeologic framework for the study area. A USGS Scientific Investigations Report will be prepared and data for the sampled wells will be stored in the publically available USGS National Water Information System (NWIS) database.